

ANNOUNCEMENT OF FEDERAL FUNDING OPPORTUNITY

EXECUTIVE SUMMARY

Federal Agency Name (s): National Ocean Service (NOS), National Oceanic and Atmospheric Administration (NOAA), Department of Commerce

Funding Opportunity Title: National Estuarine Research Reserve Graduate Research Fellowship (GRF) Program FY04

Announcement Type: Initial Announcement

Funding Opportunity Number:

Catalog of Federal Domestic Assistance (CFDA) Number: 11.420, Coastal Zone Management Estuarine Research Reserve

Dates: Applications must be postmarked no later than November 1, 2003.

Funding Opportunity Description:

The National Estuarine Research Reserve System consists of estuarine areas of the United States and its territories which are designated and managed for research and educational purposes. Each reserve within the system is chosen to reflect regional differences and to include a variety of ecosystem types in accordance with the classification scheme of the national program as presented in 15 CFR part 921.

Each reserve supports a wide range of beneficial uses of ecological, economic, recreational, and aesthetic values which are dependent upon the maintenance of a healthy ecosystem. The sites provide habitats for a wide range of ecologically and commercially important species of fish, shellfish, birds, and other aquatic and terrestrial wildlife. Each reserve has been designed to ensure its effectiveness as a conservation unit and as a site for long-term research and monitoring. As part of a national system, the reserves collectively provide an excellent opportunity to address research questions and estuarine management issues of national significance. For detailed descriptions of the sites, refer to the NERR Web site at www.ocrm.nos.noaa.gov/grf/ or contact the site staff.

FULL ANNOUNCEMENT TEXT

I. Funding Opportunity Description

A. Program Objective:

Purpose: NERR research funds are provided to support management-related research projects that will enhance scientific understanding of the reserve ecosystem, provide information needed by

reserve management and coastal management decision-makers, and improve public awareness and understanding of estuarine ecosystems and estuarine management issues (15 CFR § 921.50).

The reserve system's Graduate Research Fellowship (GRF) Program offers qualified master's and doctoral students the opportunity to address scientific questions of local, regional and national significance. The result is high-quality research focused on improving coastal management issues.

All GRF projects must be conducted in a National Estuarine Research Reserve and enhance the scientific understanding of the reserve's ecosystem. While graduate research fellows receive hands-on experience, reserve managers and coastal decision-makers receive vital ecological data.

B. Research Focus Areas:

The National Estuarine Research Reserve System is focusing on the following areas of research. Proposed research projects submitted in response to this announcement should address one of the following estuarine ecosystem topics:

- eutrophication, effects of non-point source pollution and/or nutrient dynamics;
- habitat conservation and/or restoration;
- biodiversity and/or the effects of invasive species;
- mechanisms for sustaining resources within estuarine ecosystems; or
- economic, sociological, and/or anthropological research applicable to estuarine ecosystem management

Proposals must 1) address through their master's or doctoral research coastal management issues identified as having local, regional, and/or national significance within the "Research Focus Areas" identified above, and 2) be conducted within one or more of the designated reserve(s). Proposals must clearly specify which focus area is being addressed.

Note: Although the areas of coastal and estuarine research interest identified above may be considered national in scope, they relate to and encompass regional and local issues unique to the environments of the individual reserves. It is strongly suggested that applicants contact the intended host reserve(s) (see Appendix I) for general information about the reserve(s) and the accompanying research needs and priorities as they relate to this announcement. Applicants should determine whether their proposed projects are relevant to the reserve's(s') site specific research needs.

C. Program Authority: Section 315 of the Coastal Zone Management Act of 1972, as amended (CZMA), 16 U.S.C. § 1461, establishes the National Estuarine Research Reserve System (NERRS). 16 U.S.C. § 1461 (e)(1)(B) authorizes the Secretary of Commerce to make grants to any coastal state or public or private person for purposes of supporting research and monitoring within a National Estuarine Research Reserve that are consistent with the research guidelines developed under subsection (c).

II. Award Information

A. Funding Availability

The National Estuarine Research Reserve System of NOAA announces the availability of graduate research fellowships. The Estuarine Reserves Division anticipates that 31 Graduate Research Fellowships will be competitively awarded to provide funding to qualified graduate students whose research occurs within the boundaries of at least one reserve. Minority students are encouraged to apply. The amount of the fellowship is \$20,000; at least 30% of total project cost match is required by the applicant (ie. \$8,572 match (30%) for \$20,000 (70%) in federal funds for a total project cost of \$28,572 (100%)).

B. Project Award Period

This program announcement is for projects to be conducted by graduate students for one, two, or three-year periods of funding, with an anticipated state date of June 1, 2004. When a multi-year proposal is approved, funding will initially be provided for only the first year of the program. If an application is selected for initial funding, the NERR program has no obligation to provide additional funding in connection with that award in subsequent years. Funding for each subsequent year of a multi-year proposal is at the discretion of the NERR program. Applicants may request funding for up to three years; funding for years two and three will be made available based on availability of funds and satisfactory progress of research as determined by the host reserve and the applicant's faculty advisor, in consultation with NOAA's Estuarine Reserves Division.

C. The funding instrument for NERR graduate research fellowship awards will be a grant.

III. Eligibility Information

A. Eligible Applicants

Awards are normally made to the fellow's graduate institution through the use of a grant. However, institutions eligible to receive awards include institutions of higher education, other non-profits, commercial organizations, international organizations, state, local and Indian tribal governments. All reserve staff are ineligible to submit an application for a fellowship under this announcement. Funds are expected to be available on a competitive basis to qualified graduate students for research within a reserve(s) leading to a graduate degree. Applicants must be admitted to or enrolled in a full-time master's or doctoral program at a U.S. accredited university in order to be eligible to apply. Applicants should have completed a majority of their graduate course work at the beginning of their fellowship and have an approved thesis research program. Minority students are encouraged to apply.

B. Cost Sharing or Matching Requirement

Requested federal funds must be matched by at least 30 percent of the TOTAL cost, not the federal share, of the project (ie. \$8,572 match (30%) for \$20,000 (70%) in federal funds for a total project cost of \$28,572 (100%)). Requested overhead costs under fellowship awards are limited to 10% of the federal amount. Waived overhead costs may be used as match.

C. Other

No more than two fellowships at any one reserve will be funded at any one time. Based upon fellowships awarded in the 2003 funding cycle, we anticipate 31 openings for fellowships in 2004. The amount of each fellowship award is expected to be \$20,000, which will be available to all current and prospective fellows and is intended to provide any combination of research support, salary, tuition, supplies, or other costs as needed, including overhead. Awards are issued as grants to the recipient institution.

Graduate student fellows who are selected for funding will be required to: 1) work with the research coordinator or manager at the host reserve to develop a plan to participate in the reserve's research and/or monitoring program for up to 15 hours per week; (Fellows conducting multi-site projects may fulfill this requirement at one or a combination of sites); 2) submit semi-annual progress reports to ERD and the host reserve before the end of each funding cycle on the research accomplishments to date; and 3) acknowledge NERRS support in all relevant scientific presentations and publications. In addition, fellows are strongly encouraged to publish their results in peer-reviewed literature and make presentations at local, national and international scientific meetings.

Applicants whose projects are recommended for funding will be required to complete all necessary federal financial assistance forms (SF-424, SF-424A, SF-424B, and CD-511), which will be provided by ERD with the letter of fellowship notification. The Estuarine Reserves Division recommends that all applicants work with the applicant organization during the development of their budget to ensure concurrence on budgetary issues (e.g. the use of salary and fringe benefits as match).

Fellowships are expected to be available at the following sites:

NERR Site	Openings	NERR Site	Openings
ACE Basin, SC	2	North Carolina	1
Chesapeake Bay, MD	2	Old Woman Creek, OH	1
Grand Bay, MS	2	Padilla Bay, WA	1
Great Bay, NH	1	Rookery Bay, FL	1
Guana Tolomato Matanzas, FL	2	Sapelo Island, GA	1
Hudson River, NY	1	South Slough, OR	2
Jacques Cousteau, NJ	1	Tijuana River, CA	2
Jobos Bay, PR	2	Waquoit Bay, MA	2
Kachemak Bay, AK	1	Weeks Bay, AL	2
Narragansett Bay, RI	2	Wells, ME	2

The Estuarine Reserves Division, Office of Ocean and Coastal Resource Management, reserves the right to immediately halt activity under the award if it becomes obvious that award activities are not fulfilling the mission of the National Estuarine Research Reserve System. Non-compliance with a federally approved project may result in immediate halting of the award. For applicants awarded more than one year of funding, ERD will review and approve each stage of work annually before the next begins to assure that studies will produce viable information on which to form valid coastal management decisions.

IV. Application and Submission Information

A. Address to Request Application Package

For program and application information, contact Erica Seiden of ERD at 301-713-3155 ext. 172, or fax 301-713-4363, or via internet at erica.seiden@noaa.gov. The text of the full announcement can also be viewed at the following website address: www.ocrm.nos.noaa.gov/grf/. For further information on specific research opportunities at National Estuarine Research Reserves, contact the site staff listed in Appendix I.

B. Content and Form of Application Submission

1. Proposals

Applications should be submitted to Erica Seiden, program coordinator, NOAA/Estuarine Reserves Division; 1305 East-West Highway; N/ORM5, SSMC4, Station 10500; Silver Spring, MD 20910. If there are specific questions about the program and/or application process, applicants may contact Erica Seiden at erica.seiden@noaa.gov or (301) 713-3155 ext. 172.

Receipt of all applications will be acknowledged via email. Upon receipt of the proposal, ERD will ensure the application is complete and log the information into a system database. A copy of the proposal will be sent to the appropriate reserve staff whom will coordinate a technical peer review of the proposal.

2. Required Elements

- 1. Academic resume or a *curriculum vitae*** that includes all graduate and undergraduate institutions (department or area of study, degree, and year of graduation), all publications (including undergraduate and graduate theses), awards or fellowships, and work/research experience.
- 2. Cover letter** indicating current academic status, research interests, career goals, and how the proposed research fits into their degree program. It is strongly suggested that the results of discussions with the host reserve regarding their contributions to the reserve's research and/or monitoring program be included in the letter.
- 3. Unofficial copy of all undergraduate and graduate transcripts.**
- 4. Signed letter of support from the applicant's graduate advisor** indicating the advisor's contribution (financial and otherwise) to the applicant's graduate studies, and an assurance that the student is in good academic standing.

5. Two signed letters of recommendation from other than the applicant's graduate advisor sent directly from their source. Electronically transmitted letters of support are not acceptable.

6. Research proposal must be double-spaced in 12-point Times New Roman font with one inch margins. The proposal must include the following:

a. Title page which must include the items below in the following order:

- project title;
- name, address, telephone and fax number, email address, date, and signature of applicant;
- amount of funding requested;
- name of institution providing matching funds and amount of matching funds;
- degree being sought;
- name, address, telephone number and fax number, email address, date, and signature of graduate advisor;
- reserve(s) where research is to be conducted;
- number of years of requested support;
- focus area that research proposal is addressing (see Section I. B).

b. Abstract. The abstract must state the research objectives, scientific methods to be used, and the significance of the project to a particular reserve and the reserve program. The abstract must be limited to one double-spaced page.

c. Project Description. The project description must be limited to 6 double-spaced pages excluding figures. The main body of the proposal must include a detailed statement of the work to be undertaken and the following components:

(1) Introduction. This section should introduce the research setting and environment. It should include a brief review of pertinent literature and describe the research problem in relation to relevant coastal management issues and the reserve research priorities. This section should identify the primary hypotheses, as well as any additional or component hypotheses which will be addressed by the research project.

(2) Methods. This section should state the method(s) to be used to accomplish the specific research objectives, including a systematic discussion of what, when, where, and how the data are to be collected, analyzed, and reported. Field and laboratory methods should be scientifically valid and reliable and should be accompanied by a statistically sound sampling scheme. Methods chosen should be justified and compared with other methods employed for similar work. Techniques should allow the testing of the hypotheses, but should also provide baseline data related to ecological and management questions concerning the reserve environment. Methods should be described concisely and techniques should be reliable enough to allow comparison with those made at different sites and times by different investigators.

Analytical methods and statistical tests applied to the data should be documented, thus providing a rationale for choosing one set of methods over alternatives. Quality control measures also should be documented (e.g., statistical confidence levels, standards of reference, performance requirements, internal evaluation criteria). The proposal should indicate by way of discussion how data are to be synthesized, interpreted and integrated into final work products.

Social science applicants should describe the sampling and or data collection methods including surveys, evaluation research, interviews (focus group and/or personal), participant observation, questionnaires, etc. Applicants should also describe the research design (experimental and quasi-experimental) and methods for data analysis.

A map clearly showing the study location and any other features of interest must be included; a U.S. Geological Survey topographic map, or an equivalent, is suggested for this purpose. Consultation with reserve personnel to identify existing maps is strongly recommended.

(3) Project Significance. This section should provide a clear discussion of how the proposed research addresses state and national estuarine and coastal resource management issues and how the proposed research effort will enhance or contribute to improving the state of knowledge of estuaries. This section must also discuss the relation of the proposed research to the research focus areas stated in Section I. Applicability of research findings to other reserve and coastal areas should also be mentioned. In addition, if the proposed research is part of a larger research project, the relationship between the two should be described.

d. Milestone schedule. This schedule should show, in table form, anticipated dates for completing field work, data collection, data analysis, reporting and other related activities. Use "Month 1, Month 2, etc." rather than "June, July, etc.," in preparing these charts.

e. Personnel and Project Management. The proposal must include a description of how the project will be managed, including the names and expertise of faculty advisors and other team members. Evidence of ability to successfully complete the proposed research should be supported by reference to similar efforts previously performed.

f. Literature Cited. This section should provide complete references for literature, research, and other appropriate published and unpublished documents cited in the text of the proposal.

7. Proposed budget. The amount of federal funds requested must be matched by the applicant by at least 30% of the total project cost (i.e., \$8,572 match for \$20,000 in federal funds for a total project cost of \$28,572). Cash or in-kind contributions directly benefiting the research project may be used to satisfy the matching requirements. Waived overhead costs may also be used as match. Funds from other federal agencies and reserve staff salaries supported by federal funds may not be used as match. Up to 10% of the federal share may be used for overhead or indirect costs. Indirect costs paid with the non-federal share should be within the limits of the university's negotiated

indirect cost rate agreement. Requirements for the non-federal share are contained in 15 CFR Part 14, Uniform administrative requirements for grants and agreements with institutions of higher education, hospitals, other nonprofit and commercial organizations. ERD strongly suggests that the applicant work with their institution's sponsored programs office to develop their budget.

The applicant may request funds under any of the following categories as long as the costs are reasonable and necessary to perform research: personnel, fringe benefits, travel, equipment, supplies, contractual, construction, other, and indirect. The budget should contain itemized costs with appropriate narratives justifying proposed expenditures. **Applicants must supply a table showing allocations using budget categories listed below. The federal and match portion should be listed side by side for each year of requested funding.** Please see below for further details.

--**Personnel.** Salaries requested must be consistent with the institution's regular practices. The submitting organization may request that salary data remain confidential.

--**Fringe Benefits.** Fringe benefits (i.e., social security, insurance, retirement) may be treated as direct costs as long as this is consistent with the institution's regular practices.

--**Travel.** The type, extent, and estimated cost of travel should be explained and justified in relation to the proposed research; the justification should also identify the person traveling. Travel expenses are limited to round trip travel to field research locations and professional meetings to present the research results and should not exceed 40 percent of total award.

--**Equipment.** Fellowship funds may be approved for the purchase of equipment only if the following conditions are met: (a) a lease versus purchase analysis has been conducted by the applicant or the applicant's institution for equipment that costs greater than \$5000 and the analyses indicate that purchase is the most economical method of procurement; (b) the equipment does not exist at the recipient's institution or the reserve site; and, the equipment is essential for the successful completion of the project.

The justification must address each of these criteria. It must also describe the purpose of the equipment and provide a justification for its use. Additionally, it must include a list of equipment to be purchased, leased, or rented by model number and manufacturer, where known. At the termination of the fellowship, disposition of equipment will be determined by the NOAA Property Administrator.

--**Supplies.** The budget should indicate in general terms the types of expendable materials and supplies required and their estimated costs.

8. Requests for reserve support services. On-site reserve personnel sometimes can provide limited logistical support for research projects in the form of manpower, equipment, supplies, etc. If applicable, any request for reserve support services, including any services provided as match, should be approved by the reserve manager or research coordinator prior to application submission and be included as part of the application package in the form of written correspondence. Reserve resources which are supported by federal funds are not eligible to be used as match.

9. Coordination with other research in progress or proposed. ERD encourages collaboration and cost-sharing with other investigators to enhance scientific capabilities and avoid unnecessary

duplication of effort. Applications should include a description of how the research will be coordinated with other research projects that are in progress or proposed, if applicable.

10. Permits. The applicant must apply for any applicable local, state or federal permits. A copy of any permit applications and supporting documentation should be attached to the application as appendices. ERD must receive notification of the approval of the permit application before funding can be approved. Please note if not applicable.

C. Submission Dates and Times

All materials must be postmarked no later than November 1, 2003. Applications postmarked November 2, 2003 or later will be returned without review.

D. Intergovernmental Review

Applications under this program are subject to **Executive Order 12372**, "Intergovernmental Review of Federal Programs." Applicants should contact their State Single Point of Contact (SPOC) to find out about and comply with the State's process under EO12372. The names and addresses of the SPOC's are listed in the Office of Management and Budget's Web site at <http://www.whitehouse.gov/omb/grants/spoc.html>.

E. Funding Restrictions

Up to 10% of the federal share can be used for overhead or indirect costs for these awards.

F. Other Submission Requirements

Applicants must submit in hard copy an original and two (2) copies of all application materials, except letters of reference that must come directly from their source. Proposals must be submitted to Erica Seiden, program coordinator, NOAA/Estuarine Reserves Division, 1305 East-West Highway, N/ORM5, SSMC4, Station 10500, Silver Spring, MD 20910, Attn: NERRS GRF.

V. Application Review Information

Research projects proposed in response to this announcement must: 1) address through their master's or doctoral research coastal management issues identified as having local, regional, and/or national significance, described in the "Research Focus Areas" (Section I); and 2) be conducted within one or more designated reserve(s). No more than two fellowships at any one reserve will be funded at any one time.

A. Proposals will be evaluated on the basis of the following evaluation criteria at the indicated weights:

(1) Academic record and statement of career goals and objectives (5 percent)

(2) Quality of research and applicability to program priorities (90 percent): This 90 percent will be broken down as follows: A. The quality of proposed research and its applicability to the NERRS research focus areas listed in Section I of this announcement (70%). B. The research's applicability to specific reserve research and resource management goals as they relate to the research focus areas in Section I of this announcement (20%).

(3) Recommendations/endorsements (5 percent)

(4) Additional relevant experience (0 percent)

(5) Financial need (0 percent)

B. Review and Selection Process

Once a full application has been received by NOAA, an initial administrative review is conducted to determine compliance with requirements and completeness of the application. All applications will be evaluated for scientific merit by no less than three reviewers from the scientific community. The research coordinator and/or reserve manager will oversee the review process at the reserve. Efforts are taken to ensure that conflicts of interest are avoided. It is permissible for applicants to suggest those people whom they feel would have a conflict of interest and therefore not appropriate to review their proposal. The merit reviewer's ratings are used to produce a rank order of the proposals. The Selecting Official shall award in the rank order unless the proposal is justified to be selected out of rank order based upon one of the selection factors identified below. The Selecting Official makes final recommendations for award to the Grants Officer who is authorized to obligate the funds and execute awards.

C. Selection Factors

The Selecting Official may choose a proposal out of rank order based on the following:

1. Balance of academic disciplines, institutions, and geography
2. Availability of funds
3. Program-specific objectives. The Selecting Official may choose to fund proposals which propose research in the five scientific areas of support listed above (Section I).
4. Degree type/level sought

D. Anticipated Announcement and Award Dates

Funding recommendations should be announced by February 2004. Unsuccessful applications will be retained at ERD.

VI. Award Administration Information

A. Award Notices

Applicants whose projects are recommended for funding will be required to complete all necessary federal financial assistance forms (SF-424, SF-424A, SF-424B, and CD-511), which will be provided by ERD with the letter of fellowship notification. It is anticipated that applicants will be notified of their recommendation or rejection for funding by February via hard copy letter through postal mail. The graduate student's advisor and the research coordinator at the student's host reserve will be copied on this correspondence. NOAA's Grants Management Division is the only entity authorized to provide a grant award. Therefore, once the applicant's above-mentioned

federal financial assistance forms have been submitted and approved, GMD will make the grant award to the applicant by June 1, 2004.

B. Administrative and National Policy Requirements

The terms and conditions of NOAA's National Estuarine Research Reserve Graduate Research Fellowship awards are described in Appendix 2 of this announcement.

C. Reporting

Applicants selected for funding will submit semi-annual performance reports that shall be submitted 30 days after the completion of every six month period after the project start date and a final performance report shall be submitted 90 days after the project period ending date. Recipients will be provided with the guidelines for these reports upon receiving the award. These guidelines are also located in Appendix 2 of this announcement. Financial status reports are also required every six months. These reports should be submitted by the recipient to NOAA's Grants Management Division.

VII. Agency Contacts

For questions regarding the program and application process, please contact Erica Seiden, program coordinator, at NOAA/Estuarine Reserves Division, 1305 East-West Highway, N/ORM5, SSMC4, Station 10500, Silver Spring, MD 20910 or via phone: 301-713-3155 ext. 172, email: erica.seiden@noaa.gov, or fax: 301-713-4363. The program Website can be accessed at www.ocrm.nos.noaa.gov/grf/.

If the Web page does not provide sufficient information and Erica Seiden is unavailable, please contact Maurice Crawford at (301) 713-3155 ext. 165 or maurice.crawford@noaa.gov.

For further information on specific research opportunities at National Estuarine Research Reserves, contact the site staff listed in Appendix I.

Appendix I. NERRS ON-SITE STAFF

Alabama

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Mississippi

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APPENDIX 2. AWARD TERMS AND CONDITIONS

1. Semi-annual performance reports shall be submitted 30 days after the completion of every six month period after the project start date and a final performance report shall be submitted 90 days after the project period ending date. Please use the guidelines below. Performance reports should be submitted to Erica Seiden at erica.seiden@noaa.gov or NOAA's Estuarine Reserves Division; 1305 East-West Highway; SSMC4, N/ORM5, 10th Floor; Silver Spring, MD 20910.

Fellows must copy their advisor and the research coordinator at their host reserve on all reports. Reports can be submitted electronically or via regular mail; however it is suggested that these reports are submitted via email to facilitate information exchange among these parties. If sending hard copies, please include one original and one copy.

2. Fellows will be expected to participate in the reserve's research and monitoring program for up to a maximum of 15 hours per week. The work plan should be devised cooperatively with the reserve's research coordinator. Fellows are responsible for meeting with reserve staff to coordinate this work plan. Information about this component of the fellowship must be included in the semi-annual performance reports.

3. Any database developed under this award will be transferred to 3.5 inch floppy disks or CD and provided free of charge to the applicable National Estuarine Research Reserve and NOAA's Estuarine Reserves Division.

4. Manuscripts resulting from NOAA/OCRM-sponsored research that are submitted to refereed scientific journals for publication in open literature shall acknowledge that the research was conducted under an award from the Estuarine Reserves Division, Office of Ocean and Coastal Resource Management, National Ocean Service, National Oceanic and Atmospheric Administration.

5. Prior to initiating the project, the fellow shall contact the reserve manager or research coordinator to coordinate all on-site aspects of the project, including, where applicable, the location and establishment of sampling sites, projected field sampling dates, accommodation reservations, and the need and timing for personnel assistance.

GUIDELINES FOR PREPARING SEMI-ANNUAL REPORTS

National Estuarine Research Reserve

Graduate Research Fellowships

Fellows are required to submit Semiannual Progress Reports (SPR) to the Office of Ocean and Coastal Resource Management (OCRM) at the completion of every six months of the award. If the project is extended for a period less than 6 months, an additional SPR should be submitted at the end of the extension period. SPR's need not exceed 2 typewritten pages in length and we request that you use the following format:

- 1) Principal Investigator(s), and date of SPR. **Note:** If submitting the report electronically, fellows must copy their graduate advisor and the research coordinator at the host reserve. If submitting by mail, hard copies must be sent to their graduate advisor and the research coordinator.
- 2) Address of P.I.(s). Include additional updated contact information if applicable.
- 3) NOAA Award Number.
- 4) Research Project Title.
- 5) NERR site.
- 6) Starting and ending dates of reporting period. (e.g. June 1, 2003 - November 30, 2003)
- 7) Statement of whether or not the project is meeting its milestone schedule and brief description of research activities. Please include whether any alterations to the procedures or focus of research as described in the funded proposal have occurred. If the milestone schedule is not being met and/or if significant changes to the originally funded research procedures or focus have occurred, a brief explanation is required.
- 8) A description of the ecological monitoring/research program developed with reserve staff and how it is being implemented.
- 9) List of manuscripts published or in review during this six month period that resulted from or

deal with this fellowship. Include author, title, date, journal/thesis/ dissertation, etc. Include copies of any articles published.

10) List presentations or seminars given this six month period that resulted from or dealt with this fellowship.

11) Other notable events, significant research accomplishments, etc. concerning this fellowship.

Please Note: Any subject or communications other than those given above (i.e. requests for extensions of research period) should not be included as part of the SPR. The purpose of the SPR is to inform ERD and the reserve: a) about the progress of the proposed research and b) what presentations, publications and/or significant benchmarks were completed during that given six month period.

GUIDELINES FOR PREPARING FINAL REPORTS

National Estuarine Research Reserve

Graduate Research Fellowships

Final reports are required for all research funded through grants and cooperative agreements from NOAA's Estuarine Reserves Division (ERD). The purpose of the final report is to describe the activities and summarize the results of the project funded during the award period. These reports should be submitted to Erica Seiden; NOAA's Estuarine Reserves Division; SSMC4, N/ORM5; 1305 East-West Highway; Silver Spring, MD 20910. Reports must be submitted in both hard copy (2 copies) and electronically via email, disk or CD. The final report is due 90 days after the expiration of the award.

Title page: The title of the project should be followed by the name(s) and address(es) of the investigator(s)/author(s), the date (month and year) of submission, the name of the site(s) (National Estuarine Research Reserve) where the work was conducted, and the grant number. The title may be other than was given to the project upon application for funding, as long as it accurately describes the project.

Table of contents: The table of contents should list all the sections and sub-sections as they appear in the text, with the corresponding page numbers. Lists of figures and tables should also be provided.

Abstract and key words: A one paragraph abstract, of no more than 200 words, should be included on a separate page. The abstract should summarize the project, including the problem, the methods, the results, and any conclusions, particularly as they apply to reserve management. The author(s) should bear in mind that the abstract may be printed in the ERD research synthesis document for National Estuarine Research Reserves. At the bottom of the abstract page a list of three to ten key words should be given. These key words will be used in the index of the appropriate synthesis document.

Text: The text should be divided into Introduction, Materials and Methods, Results, Discussion, Literature Cited, and Acknowledgment sections. Sub-sections may be used as needed. Technical terms, acronyms and abbreviations should be explained in full when first presented. Scientific species names should be given in full when first mentioned and underlined or italicized. All measurements should be expressed in SI units, as defined in *Standard 1000, SI Units and Recommendations for the Use of their Multiples and Certain Other Units*, available through the American National Standard Institute, 1430 Broadway, New York, NY 10018. The report should give a more complete and thorough presentation of the work than one would expect in a typical peer-reviewed scientific journal. Specifically, a full description of methods, in-depth literature

review, and a greater elaboration of significance of results and the importance to management of marine and coastal resources should be included. All text should be double spaced.

Literature cited: Referenced literature should be cited in the text by author and year of publication. Multiple citations at the same point in the text should be listed chronologically (e.g. Burbank, 1967; Abbott, 1974; Crosby, 1985; Crosby et al., 1990; Crosby & Roberts, 1990; Golde et al., in review). Journal titles should be abbreviated as recommended in the *American Standard for Periodical Title Abbreviations*, available through the American National Standard Institute, 1430 Broadway, New York, NY 10018. Full citations in the Literature Cited section should be listed alphabetically using the following format:

Book: Abbott, R.T. 1974. American Seashells. Van Nostrand Reinhold Co., New York. Second edition. 663pp.

Article: Crosby, M.P. 1985. The use of a rapid radiolabeling method for measuring ingestion rates of detritivores. J. Exp. Mar. Biol. Ecol. 93:273-283.

Crosby, M.P., R.I.E. Newell and C.J. Langdon . 1990.

Bacterial mediation in the utilization of carbon and nitrogen from detrital complexes by *Crassostrea virginica*. Limnol. Oceanogr. 35(3):625-639.

Golde, H.M., M.P. Crosby, C.R. Lovell and S.E. Stancyk. (In review). Reduction of sediment oxygen uptake due to treatment by ionizing radiation. Mar. Ecol. Prog. Ser.

Component: Burbank, W.D. 1967. Evolutionary and Ecological Implications of the Zoogeography, Physiology and Morphology of *Cvathura* (Isopoda), pp. 564-573 In G.E. Lauff (ed.), Estuaries. Washington, D.C.

Figures and tables: Figures and tables should be used to clarify text and summarize data. Figures and tables should appear on separate pages (numbered in sequence with the rest of the text)

immediately following the page where they are first mentioned. Each figure or table should be clearly labeled with an appropriate descriptive legend.

Appendices: Appendices should be used to present actual data and measurements made during the study. Only summaries of the data should be presented in the text. In addition, any additional materials not appropriate for inclusion in the main text, such as computer programs or models generated, should be appended to the report. Again, as much data as possible should be given.

Publication: To insure that the results of OCRM-sponsored research reach as many interested parties as possible, OCRM strongly encourages investigators to submit the results of their work to peer reviewed journals for publication. Manuscripts submitted for publication must acknowledge that the work was supported by a grant from NOAA's OCRM, and a copy of each publication must be provided to OCRM at the address given in the beginning of this document. When submitting final reports, investigators should indicate that they are submitting a manuscript to a journal.

Further information: Questions regarding submission of research reports should be directed to Erica Seiden at (301) 713-3155 extension 172 or erica.seiden@noaa.gov.